

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
	<del>the course of retrieval, sorting, sampling, and repackaging.</del>			
3.1.2.3-1. The project shall take samples to support <del>characterization</del> waste determination of waste zone materials placed in containers that are going into interim storage.	The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001. This <del>determination is</del> "characterization" is for safe storage and material disposition safe and compliant storage including waste determination appropriate for the storage location. EDF 3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.	Deleted "interim" from the requirement statement to remove unintended implication that storage before permitted storage would necessarily occur. Clarification and simplification. Update the requirement basis to reflect the storage work scope change.	3.1.2.3-1. The project shall take samples to support characterization of waste zone materials placed in containers that are going into storage.	The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001. This characterization is for safe and compliant storage including waste determination appropriate for the storage location.
3.1.2.3-2. The project shall include a sample tracking process.	The sample tracking process includes logging and tracking samples and associating the sample to the source material.	No change.	3.1.2.3-2. The project shall include a sample tracking process.	The sample tracking process includes logging and tracking samples and associating the sample to the source material.
3.1.2.3-3. The project shall provide data to determine contaminants in the underburden.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 2.1, Recommended Approach; 3.3, Stage II Objectives and Requirements; 4.1.4, Risk Analysis; and 4.3.1, Process Description. Samples will be taken of the underburden. As defined by the project Data Quality Objectives (DQOs) data quality objectives.	Editorial changes.	3.1.2.3-3. The project shall provide data to determine contaminants in the underburden.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Sections 2.1, Recommended Approach; 3.3, Stage II Objectives and Requirements; 4.1.4, Risk Analysis; and 4.3.1, Process Description. Samples will be taken of the underburden, as defined by the project data quality objectives.
3.1.2.3-4. The project shall characterize <del>samples of</del> waste zone material for safe and compliant storage including waste determination appropriate to establish acceptability of associated waste drums to the INEEL RRWAC disposition to Advanced Mixed Waste Treatment Facility (AMWTF).	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, <del>Section 4.0, WIPP Ready Packaging as modified by the August 16, 2002, baseline change for onsite storage.</del>	Editorial changes, simplification, and update to reflect the onsite storage work scope change. 03/2002 Response to agency comment # 88 on draft CDR.	3.1.2.3-4. The project shall characterize samples of waste zone material for safe and compliant storage including waste determination appropriate to establish acceptability of associated waste drums to the INEEL RRWAC.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, as modified by the August 16, 2002, baseline change for onsite storage.
3.1.2.3-5. The project shall sample underburden below the retrieval area.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 2.1, Recommended Approach; 4.3.1, Process Description; and Figure 4.3-2. The underburden will be sampled during the OU 7-10 Glovebox Excavator Method pProject excavation.	Editorial changes. 03/2002 Response to agency comment # 88 on draft CDR.	3.1.2.3-5. The project shall sample underburden below the retrieval area.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 2.1, Recommended Approach; 4.3.1, Process Description; and Figure 4.3-2. The underburden will be sampled during the OU 7-10 Glovebox Excavator Method Project excavation.
3.1.2.4-1. The project shall be capable of packaging material in 55- and 85-gallon drums.	Standard waste containers include 55- and 85-gallon drums. Safe and cost effective storage and transport of hazardous materials requires packaging in standard waste containers.	Editorial changes.	3.1.2.4-1. The project shall be capable of packaging material in 55- and 85-gal drums.	Standard waste containers include 55- and 85-gal drums. Safe and cost effective storage and transport of hazardous materials requires packaging in standard waste containers.

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.1.2.4-2. The project shall be capable of packaging in overpack waste containers for <del>interim</del> storage.	In the event that overpack is needed, the capability will exist to package intact waste containers.	Deleted "interim" from the requirement statement to remove unintended implication that storage before permitted storage would necessarily occur.	3.1.2.4-2. The project shall be capable of packaging in overpack waste containers for storage.	In the event that overpack is needed, the capability will exist to package intact waste containers.
3.1.2.4-3. The project shall be capable of packaging waste <u>zone</u> material in containers <u>that meet the requirements of the INEEL RRWAC-acceptable to AMWTF.</u>	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 3.3, Stage II Objectives and Requirements; <del>Section 4.0, WIPP-Ready-Packaging as modified by the August 16, 2002, baseline change for onsite storage.</del> The recommended disposition of all waste zone <u>material</u> packages is <del>to transfer to an onsite facility for storage pending a decision on final disposition them to the AMWTF for WIPP preparation.</del>	Simplification, clarification, and update to reflect the onsite storage work scope change.	3.1.2.4-3. The project shall be capable of packaging waste zone material in containers that meet the requirements of the INEEL RRWAC.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 3.3, Stage II Objectives and Requirements, as modified by the August 16, 2002, baseline change for onsite storage. The recommended disposition of all waste zone material packages is transfer to an onsite facility for storage pending a decision on final disposition.
3.1.2.4-4. The project shall label the <del>containers of</del> packaged waste <del>containers</del> zone material in accordance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirements and the INEEL RRWAC.	The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, as modified by the August 16, 2002, baseline change for onsite storage. The project will characterize the waste zone material for safe and compliant storage and store wastes in containers that are properly labeled. <del>EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.</del>	clarification and to add necessary scope for requirement. Reference to EDF-3032 was deleted as this document is not a basis for the T&FR requirement.	3.1.2.4-4. The project shall label the containers of packaged waste zone material in accordance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirements and the INEEL RRWAC.	The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, as modified by the August 16, 2002, baseline change for onsite storage. The project will characterize the waste zone material for safe and compliant storage and store waste in containers that are properly labeled.
3.1.2.5-1. The project shall <del>store</del> be capable of storing overburden removed from <del>Pit 9</del> OU 7-10 for future disposition.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.1, Modification Description. Disposition of <u>overburden</u> soil is not <del>determined yet finalized and</del> <del>several disposition potentials paths exist.</del> Final disposition will be based on existing overburden characterization data and depending on the results of <del>characterization</del> an economic analysis. A storage capability is necessary since <del>overburden</del> overburden soil removed to a mutually agreed upon depth <del>can</del> may be returned to the excavation for reuse as overburden. Interstitial soil is handled as part of "waste zone material". <del>EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Analysis.</del>	Clarification of requirement and basis statements. 1) The project needs this capability but may not store overburden depending on the selected disposition path (e.g., no storage is necessary if overburden is dispositioned immediately). 2) EDF-3032 reference deleted as this document was not an appropriate basis for the requirement.	3.1.2.5-1. The project shall be capable of storing overburden removed from OU 7-10 for future disposition.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.1, Modification Description. Disposition of overburden soil is not yet finalized and several disposition paths exist. Final disposition will be based on existing overburden characterization data and on the results of an economic analysis. A storage capability is necessary since overburden soil removed to a mutually agreed upon depth may be returned to the excavation for reuse as overburden. Interstitial soil is handled as part of waste zone material.

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.1.2.5-2. The project shall be capable of storing <del>store</del> overburden in a manner that prevents contamination from other materials.	<del>From a waste management perspective, all-existing data (Lockheed Martin Advanced Environmental Systems [LMAES] sample data and Stage I type A probe data) and process knowledge information (e.g., original borrow source and method of emplacement) on the overburden soils leads to the conclusion that the overburden soils are appropriately managed as low-level waste. The low-level waste designation is only appropriate as long as overburden retrieval and handling prevents contamination from the waste or other materials. Overburden contains contaminants of concern (COCs) at below risk-based concern levels that would require special handling per the Preliminary Hazards Analysis (PHA). EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.</del>	Clarification of requirement and basis statements. 1) The project needs this capability but may not store overburden depending on the selected disposition path (e.g., no storage is necessary if overburden is dispositioned immediately). 2) Basis updated and EDF-3032 reference deleted as this document was not an appropriate basis for the requirement.	3.1.2.5-2. The project shall be capable of storing overburden in a manner that prevents contamination from other materials.	From a waste management perspective, all-existing data (Lockheed Martin Advanced Environmental Systems [LMAES] sample data and Stage I type A probe data) and process knowledge information (e.g., original borrow source and method of emplacement) on the overburden soils leads to the conclusion that the overburden soils are appropriately managed as low-level waste. The low-level waste designation is only appropriate as long as overburden retrieval and handling prevents contamination from the waste or other materials.
3.1.2.5-3. The project shall be capable of storing <del>store</del> overburden in a manner that prevents contamination of other materials or the environment.	<del>The overburden contains trace levels of contamination based on Lockheed Martin Advanced Environmental Systems (LMAES) sampling in 1995. The contamination limits are defined in Table 2-2 of Manual 15A - INEEL Radiological Control. Requirements for confinement during handling and storage are defined in Chapter 3 of the same manual. The requirement for material management of overburden is independent of its TRU content. EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.</del>	Clarification of requirement and basis statements. 1) The project needs this capability but may not store overburden depending on the selected disposition path (e.g., no storage is necessary if overburden is dispositioned immediately). 2) Basis updated and EDF-3032 reference deleted as this document was not an appropriate basis for the requirement.	3.1.2.5-3. The project shall be capable of storing overburden in a manner that prevents contamination of other materials or the environment.	The overburden contains trace levels of contamination based on Lockheed Martin Advanced Environmental Systems (LMAES) sampling in 1995. The contamination limits are defined in Table 2-2 of Manual 15A - INEEL Radiological Control. Requirements for confinement during handling and storage are defined in Chapter 3 of the same manual.
3.1.2.5-4. The project shall be capable of storing <del>store</del> retrieved waste zone material for future disposition.	<del>The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001. On-site storage of retrieved waste zone material is required per the Record of Decision. EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.</del>	Clarification of requirement and basis statements. Basis updated and EDF-3032 reference deleted as this document was not an appropriate basis for the requirement.	3.1.2.5-4. The project shall be capable of storing retrieved waste zone material for future disposition.	The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001.
3.1.2.5-5. The project shall provide data on cost to store retrieved materials pending disposition.	<del>The WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section B.1 Scope Assumptions: Characterization assumption</del>	Requirement deleted. The parent requirement (i.e., App. A of the 1997 RD/RA SOW,		



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
	<del>states that the planned sampling and characterization/data strategy is adequate and is limited to only that required for safe storage of retrieved waste and current Advanced Mixed Waste Treatment Facility (AMWTF) waste acceptance criteria. Assume that processing of the retrieved waste at the AMWTF will be successfully negotiated with the operating contractor.</del>	Section 3.5) established a goal to maintain cost within the January 1995 ESD for Pit 9. The project has been rebaselined and this goal no longer applies.		
3.1.3-1. The project shall use, where available, commercial equipment and products.	<del>Procurement items will not be on the project's critical path.</del> These items are readily available, and have shorter delivery times, known reliabilities, spare parts available, and lower cost.	To clarify basis.	3.1.3-1. The project shall use, where available, commercial equipment and products.	These items are readily available, and have shorter delivery times, known reliabilities, spare parts available, and lower cost.
3.1.3-2. The project shall utilize the services that are available from RWMC and INEEL.	"Services" refers to RWMC and INEEL capabilities such as the Idaho Nuclear Technology and Engineering Center Analytical Lab, RWMC Stored Waste Examination Pilot Plant (SWEPP), RWMC storage buildings, and INEEL transportation, etc.	Clarification and editorial changes.	3.1.3-2. The project shall utilize the services that are available from RWMC and INEEL.	"Services" refers to RWMC and INEEL capabilities such as the Idaho Nuclear Technology and Engineering Center Analytical Lab, RWMC Stored Waste Examination Pilot Plant, RWMC storage buildings, and INEEL transportation.
3.1.3-3. The project shall use, where available, existing utilities.	The intent of using existing utilities is to be cost effective by minimizing new construction, recognizing that additional utility services may be required if the processes and equipment are used for follow-on implementation at a later date.	No change.	3.1.3-3. The project shall use, where available, existing utilities.	The intent of using existing utilities is to be cost effective by minimizing new construction, recognizing that additional utility services may be required if the processes and equipment are used for follow-on implementation at a later date.
3.2.1-1. The project shall be capable of handling waste that measures up to 200 mR/hour on contact with the outer container.	Idaho National Engineering Laboratory, <i>Comparison of the Pit 9 Project Inventory of Contaminants Against the Corresponding Portion of the Historical Data Task Inventory, and Recommended Revised Quantities</i> , January 1996, INEL-96/0055, Rev. 0. This report establishes that the target Rocky Flats waste was all contact-handled. Contact-handled TRU waste, by definition, is less than 200 mR/hour.	Editorial and clarification changes.	3.2.1-1. The project shall be capable of handling waste that measures up to 200 mR/hour on contact with the outer container.	Idaho National Engineering Laboratory, <i>Comparison of the Pit 9 Project Inventory of Contaminants Against the Corresponding Portion of the Historical Data Task Inventory, and Recommended Revised Quantities</i> , January 1996, INEL-96/0055, Rev. 0. This report establishes that the target Rocky Flats waste was all contact-handled. Contact-handled TRU waste, by definition, is less than 200 mR/hour.
3.2.2-1. The project shall apply as low as reasonably achievable (ALARA) principles of exposures to materials (radioactive or hazardous) to ensure worker safety.	DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees"; and 10 CFR 835, "Occupational Radiation Protection," Subpart K, "Design and Control."	Editorial changes.	3.2.2-1. The project shall apply as low as reasonably achievable (ALARA) principles of exposures to materials (radioactive or hazardous) to ensure worker safety.	DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees"; and 10 CFR 835, "Occupational Radiation Protection," Subpart K, "Design and Control."

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.2.2-2. The project shall ensure that the individual worker radiation exposure dose is less than the <u>administrative control limit</u> of 0.7 rem (700 mrem) per year.	5 rem (5,000 mrem) is required by Agency documents, while 0.7 rem (700 mrem) is the limit established in accordance with the INEEL Radiological Control Manual, Article 211.2.	Clarification.	3.2.2-2. The project shall ensure that the individual worker radiation exposure dose is less than the administrative control limit of 0.7 rem (700 mrem) per year.	5 rem (5,000 mrem) is required by Agency documents, while 0.7 rem (700 mrem) is the limit established in accordance with the INEEL Radiological Control Manual, Article 211.2.
3.2.2-3. The project shall protect against human exposure to radiation, airborne radionuclides, and hazardous chemicals during the <b>OU 7-10 Glovebox Excavator Method</b> project operations.	To be protective, exposure limits must be less than or equal to <del>ACGIH</del> the American Conference of Government Industrial Hygienists threshold limit values, Occupational Safety and Health Administration (OSHA) permissible exposure levels, or <del>NIOSH</del> National Institute for Occupational Safety and Health recommended exposure levels, whichever is less. DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees"; and 10 CFR 835, "Occupational Radiation Protection."	Editorial changes.	3.2.2-3. The project shall protect against human exposure to radiation, airborne radionuclides, and hazardous chemicals during the project operations.	To be protective, exposure limits must be less than or equal to the American Conference of Government Industrial Hygienists threshold limit values, Occupational Safety and Health Administration (OSHA) permissible exposure levels, or National Institute for Occupational Safety and Health recommended exposure levels, whichever is less. DOE Order 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees"; and 10 CFR 835, "Occupational Radiation Protection."
3.2.3-1. The project shall ensure that the probability of a criticality is less than extremely unlikely.	Controls will be implemented to ensure criticality does not occur. These include monitoring fissile loading for some waste matrices to ensure that overloading does not occur (see 3.2.3-2 below) and limiting operations in the presence of unsafe quantities of moderator. Controls are necessary since criticality cannot be deemed incredible as described in the <i>Preliminary Documented Safety Analysis (PDSA) for the OU 7-10 Glovebox Excavator Method Project</i> , INEEL/EXT-01-01474, Rev. 0, April 2002.	Clarification and editorial changes.	3.2.3-1. The project shall ensure that the probability of a criticality is less than extremely unlikely.	Controls will be implemented to ensure criticality does not occur. These include monitoring fissile loading for some waste matrices to ensure that overloading does not occur (see 3.2.3-2 below) and limiting operations in the presence of unsafe quantities of moderator. Controls are necessary since criticality cannot be deemed incredible as described in <i>Preliminary Documented Safety Analysis for the OU 7-10 Glovebox Excavator Method Project</i> , INEEL/EXT-01-01474, Rev. 0, April 2002.
3.2.3-2. The project shall ensure that drums are not overloaded relative to the fissile content of the final package.	The overloaded fissile material limit is 380 <del>±</del> fissile gram equivalent (FGE) per drum, with the operational limit set at 200 <del>±</del> FGE. Some waste streams will be identifiable through process knowledge and should not produce overloaded drums. Other waste streams need to be monitored as drums are loaded to ensure compliance with fissile loading limits. Certain waste streams, if overloaded, lead to difficult operational recovery processes in order to be repackaged. The reference for the basis for the 380-FGE limit is 75% of the minimum critical system for Pu-239 systems, in accordance with PRD-112, "Criticality Safety Program Requirements Manual." The basis for the 200-	Clarification of the source of the limit.	3.2.3-2. The project shall ensure that drums are not overloaded relative to the fissile content of the final package.	The overloaded fissile material limit is 380 fissile gram equivalent (FGE) per drum, with the operational limit set at 200 FGE. Some waste streams will be identifiable through process knowledge and should not produce overloaded drums. Other waste streams need to be monitored as drums are loaded to ensure compliance with fissile loading limits. Certain waste streams, if overloaded, lead to difficult operational recovery processes in order to be repackaged. The reference for the basis for the 380-FGE limit is 75% of the minimum critical system for Pu-239 systems, in accordance with PRD-112, "Criticality Safety Program Requirements Manual." The basis for the 200-



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
	FGE limit is the INEEL RRWAC.			FGE limit is the INEEL RRWAC.
3.2.3-3. The project shall be <del>capable of making provisions for</del> determining, after packaging, the fissile content of all drummed waste zone material.	<del>In order to meet proper onsite storage criteria</del> WAC, fissile assaying content of the drums must be <del>completed determined</del> before storage in a drum storage facility. (Reference: INEEL RRWAC, EDF-3032, OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach.	Clarification following baseline change for onsite storage.	3.2.3-3. The project shall make provisions for determining, after packaging, the fissile content of all drummed waste zone material.	To meet onsite storage WAC, fissile content of the drums must be determined before storage (Reference: INEEL RRWAC).
3.2.3-4. The project shall <del>be</del> provide a criticality alarm system.	A criticality alarm is necessary because a criticality event cannot be deemed an incredible event as described in the Preliminary Documented Safety Analysis for the OU 7-10 Glovebox Excavator Method Project, INEEL/EXT-01-01474, Rev. 0, April 2002, and DOE Order 420.1, "Facility Safety."	Clarification and editorial corrections. Note: The record copy of Rev. 2 (on file as of 7/18/02) had a discrepancy in that this requirement and its basis were identified in the change log (Attachment 2 to Rev. 2) as a new requirement but they were not incorporated in the body of the Rev. 2 document. The hardcopy version of Rev. 2 that was provided to the Agencies had corrected this error. The facility design was not impacted.	3.2.3-4. The project shall provide a criticality alarm system.	A criticality alarm is necessary because a criticality event cannot be deemed an incredible event as described in the Preliminary Documented Safety Analysis for the OU 7-10 Glovebox Excavator Method Project, INEEL/EXT-01-01474, Rev. 0, April 2002, and DOE Order 420.1, "Facility Safety."
3.2.4-1. The project shall ensure protection of workers in accordance with 29 CFR 1910, "Occupational Safety and Health Standards," or equivalent.	Compliance with 29 CFR 1910 is a regulatory and contractual requirement. The project industrial hygienist and safety engineer will perform regular assessments of the work area during operations to ensure compliance with 29 CFR 1910, "Occupational Safety and Health Standards." The project industrial hygienist will conduct monitoring for hazardous constituents using portable monitoring equipment to verify protection of workers in accordance with the exposure requirements in 29 CFR 1910 or equivalent.  There will be no air monitoring for volatile organic compounds (VOCs) inside the weather enclosure structure (there is no secondary confinement). An analysis will be performed to verify that VOC monitoring inside the weather enclosure is not required to meet 29 CFR 1910, Occupational Safety and Health Standards.	Editorial change and basis clarification.	3.2.4-1. The project shall ensure protection of workers in accordance with 29 CFR 1910, "Occupational Safety and Health Standards," or equivalent.	Compliance with 29 CFR 1910 is a regulatory and contractual requirement. The project industrial hygienist and safety engineer will perform regular assessments of the work area during operations to ensure compliance with 29 CFR 1910, "Occupational Safety and Health Standards." The project industrial hygienist will conduct monitoring for hazardous constituents using portable monitoring equipment to verify protection of workers in accordance with the exposure requirements in 29 CFR 1910 or equivalent.

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.2.5-1. The project shall be designed to withstand the effects of INEEL climate and natural phenomena in accordance with the DOE-ID Architectural Engineering Standards.	The documented safety analysis assumes that the weather enclosure structure (WES) is designed for Performance Category (PC) -2 wind loads and that the retrieval confinement structure (RCS) and packaging glovebox system (PGS) are designed for PC-2 seismic loads. DOE orders, executive orders, and applicable codes require occupied areas to be designed for earthquake loads. The project is required to design for the local effects of storm water. Larger scale flooding will be handled by the existing Radioactive Waste Management Complex (RWMC) flood control and drainage system. All the structures, systems, and components are designed to resist natural phenomena. Of the natural phenomena considered, wind most greatly affects the design of the weather enclosure, and even a short duration operation must meet the wind requirements. Flood design for local storm effects is applicable for even short operational periods. Earthquake loads could possibly be reduced, but the effort to determine the proper reduction is likely to be more costly than designing for normal earthquake forces.	Basis clarification.	3.2.5-1. The project shall be designed to withstand the effects of INEEL climate and natural phenomena in accordance with the DOE-ID Architectural Engineering Standards.	The documented safety analysis assumes that the weather enclosure structure (WES) is designed for Performance Category (PC) -2 wind loads and that the retrieval confinement structure (RCS) and packaging glovebox system (PGS) are designed for PC-2 seismic loads. DOE orders, executive orders, and applicable codes require occupied areas to be designed for earthquake loads. The project is required to design for the local effects of storm water. Larger scale flooding will be handled by the existing Radioactive Waste Management Complex (RWMC) flood control and drainage system.
3.2.5-2. The project shall provide restrooms, personnel monitoring areas, and other administrative or support areas as necessary.	Personnel must be provided a safe and healthy work environment. Offices, lunchrooms, showers, and locker rooms will not be provided as part of the new structures. No permanent change room facilities will be constructed; however, facilities will be provided as required by the Health and Safety Plan (HASP). Emergency support areas will be available.	Requirement moved to Section 3.2.6.		
3.2.5-3. The project shall maintain lighting levels adequate to support operations.	Adequate lighting is needed for safe operations.	Requirement moved to Section 3.2.6.		
3.2.5-4. The project shall maintain temperatures that allow normal equipment operation inside the confinement.	Temperature in the facility must not fall below a point at which the equipment will not be able to be operated. All equipment will operate satisfactorily if the comfort zone temperatures required by section 1550 of the DOE-ID Architectural Engineering Standards are met.	Requirement moved to Section 3.2.6.		

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.2.5-2. The project shall be capable of resisting limited subsidence of the pit surface.	The design must take into account subsidence and angle of repose.	Requirement renumbered.	3.2.5-2. The project shall be capable of resisting limited subsidence of the pit surface.	The design must take into account subsidence and angle of repose.
3.2.6-1 The project shall be operated by workers located outside the confinement during waste zone material retrieval.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 1.1, Recommendation; 2.1, Recommended Approach; 4.3 Glovebox Excavator Method; 4.3.1, Modification Description; and Table 4.3.5. Performance without requiring personnel access to the excavation pit or entry into the confinement during system operation is preferred based on reducing the risk of chemical or radioactive exposure and to reduce the potential for physical injury to workers.	To clarify requirement so that it is clear that personnel may be in the confinement during overburden removal (i.e., this requirement was meant to be in effect after overburden was removed). This is also true for shutdown operations.	3.2.6-1 The project shall be operated by workers located outside the confinement during waste zone material retrieval.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Sections 1.1 Recommendation; 2.1, Recommended Approach; 4.3, Glovebox Excavator Method; 4.3.1, Modification Description; and Table 4.3.5. Performance without requiring personnel access to the excavation pit or entry into the confinement during system operation is preferred based on reducing the risk of chemical or radioactive exposure and to reduce the potential for physical injury to workers.
3.2.6-2. The project shall provide restrooms, personnel monitoring areas, and other administrative or support areas as necessary.	Personnel must be provided a safe and healthy work environment. Offices, lunchrooms, showers, and locker rooms will not be provided as part of the new structures. No permanent change room facilities will be constructed; however, facilities will be provided as identified in the health and safety plan. Emergency support areas will be available.	Requirement moved from Section 3.2.5, basis clarified, and editorial changes made.	3.2.6-2. The project shall provide restrooms, personnel monitoring areas, and other administrative or support areas as necessary.	Personnel must be provided a safe and healthy work environment. Offices, lunchrooms, showers, and locker rooms will not be provided as part of the new structures. No permanent change room facilities will be constructed; however, facilities will be provided as identified in the health and safety plan. Emergency support areas will be available.
3.2.6-3. The project shall maintain lighting levels adequate to support operations.	Adequate lighting is needed for safe operations.	Requirement moved from Section 3.2.5.	3.2.6-3. The project shall maintain lighting levels adequate to support operations.	Adequate lighting is needed for safe operations.
3.2.6-4. The project shall maintain temperatures that allow normal equipment operation inside the confinement.	Temperature in the facility must not fall below a point at which the equipment will not be able to be operated. All equipment will operate satisfactorily if the comfort zone temperatures required by section 1550 of the DOE-ID Architectural Engineering Standards are met.	Requirement moved from Section 3.2.5.	3.2.6-4. The project shall maintain temperatures that allow normal equipment operation inside the confinement.	Temperature in the facility must not fall below a point at which the equipment will not be able to be operated. All equipment will operate satisfactorily if the comfort zone temperatures required by section 1550 of the DOE-ID Architectural Engineering Standards are met.
3.2.7-1 The project shall control releases of hazardous and radioactive effluents to the environment within the limits referenced in DOE 5400.1, General Environmental Protection Programs; DOE 5400.5, "Radiation Protection of the Public and the Environment"; and the National Contingency Plan (NCP).	The primary long-term objective is to provide for long-term protection of human health and the environment; it is also important to provide for the short-term safety and health of the environment, community, and workers. This is to include the short-term risk assessment as per the NCP.	Eliminated reference since specific limits are not specified in the document. Also slight editorial changes.	3.2.7-1 The project shall control releases of hazardous and radioactive effluents to the environment within the limits referenced in DOE 5400.5, "Radiation Protection of the Public and the Environment" and the National Contingency Plan (NCP).	The primary long-term objective is to provide for long-term protection of human health and the environment; it is also important to provide for the short-term safety and health of the environment, community, and workers. This is to include the short-term risk assessment as per the NCP.
3.2.7-2 The project shall maintain releases of radioactive materials to the environment and community within acceptable limits as defined by 40 CFR 61, "National Emission Standards For Hazardous Air	Provides for protection of human health and the environment.	Clarification and consistency.	3.2.7-2 The project shall maintain releases of radioactive materials to the environment and community within acceptable limits as defined by 40 CFR 61, "National Emission Standards For Hazardous Air	Provides for protection of human health and the environment.



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
Pollutants," Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities."			Pollutants," Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities."	
3.2.7-3. The project shall provide data on short-term risk to workers for project operations.	<p>The <del>OU 7-10 Glovebox Excavator Method Project Air Emissions Evaluation</del> <u>Air Emissions Evaluation for the OU 7-10 Glovebox Excavator Method Project (EDF-2322)</u> <del>will</del> documents estimated short-term risk from project operations to appropriate receptors. No other data collection for short-term <u>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)</u> risk evaluation is required. Based on EPA guidance, <del>in</del> "Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual," Part C, "Risk Evaluation of Remedial Alternatives," PB92-963334, Publication 9285.7-01C (EPA 1991), "short-term risks" are defined as - "Risks that occur during implementation of a remedial alternative. Some 'short-term' risks can occur over a period of many years (e.g., risk associated with air stripper emissions)." As a result of this definition, the risks are those that result from hazardous chemical or radionuclide exposures. The past Stage II INEEL <del>CERCLA</del> assessments have limited the <u>short-term</u> risk evaluation to a <del>co-located</del> <u>collocated</u> worker receptor (e.g., at an assumed 100-meter [328-ft] distance) and the maximally exposed individual for a public receptor scenario. Actual remediation workers (not the <del>co-located</del> <u>collocated</u> worker<del>s</del>) involved in OU 7-10 cleanup are assumed to be protected through DOE and <u>Occupational Safety and Health Administration (OSHA)</u> standards and do not require evaluation in the short-term risk assessment. <u>The Preliminary Documented Safety Analysis for the OU 7-10 Glovebox Excavator Method Project, INEEL/EXT-01-01474, Rev. 0, April 2002, evaluates risk of exposures during accident conditions to the remediation workers</u></p>	To add clarifying information.	3.2.7-3. The project shall provide data on short-term risk to workers for project operations.	<p>The <u>Air Emissions Evaluation for the OU 7-10 Glovebox Excavator Method Project (EDF-2322)</u> documents estimated short-term risk from project operations to appropriate receptors. No other data collection for short-term <u>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)</u> risk evaluation is required. Based on EPA guidance in "Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual," Part C, "Risk Evaluation of Remedial Alternatives," PB92-963334, Publication 9285.7-01C (EPA 1991), "short-term risks" are defined as - "Risks that occur during implementation of a remedial alternative. Some 'short-term' risks can occur over a period of many years (e.g., risk associated with air stripper emissions)." As a result of this definition, the risks are those that result from hazardous chemical or radionuclide exposures. The past Stage II INEEL CERCLA assessments have limited the short-term risk evaluation to a collocated worker receptor (e.g., at an assumed 100-m [328-ft] distance) and the maximally exposed individual for a public receptor scenario. Actual remediation workers (not the collocated worker) involved in OU 7-10 cleanup are assumed to be protected through DOE and Occupational Safety and Health Administration (OSHA) standards and do not require evaluation in the short-term risk assessment. <u>The Preliminary Documented Safety Analysis for the OU 7-10 Glovebox Excavator Method Project, INEEL/EXT-01-01474, Rev. 0, April 2002, evaluates risk of exposures during accident conditions to the remediation workers (qualitative), collocated workers (qualitative and quantitative), and offsite public (qualitative and quantitative).</u></p>

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
	(qualitative), collocated workers (qualitative and quantitative), and offsite public (qualitative and quantitative). Chapters 7 and 8 of the final documented safety analysis will provide an estimate of the annual worker doses to radiological and nonradiological workers during normal operations.			Chapters 7 and 8 of the final documented safety analysis will provide an estimate of the annual worker doses to radiological and nonradiological workers during normal operations.
3.2.8-1. The design and operational plans for the project shall take into account the presence of probes in the planned excavation area, and in the vicinity of the excavation.	Subsurface probes were placed in the Subsurface Disposal Area (SDA) during Stage I activities.	Editorial change.	3.2.8-1. The design and operational plans for the project shall take into account the presence of probes in the planned excavation area, and in the vicinity of the excavation.	Subsurface probes were placed in the Subsurface Disposal Area (SDA) during Stage I activities.
3.3.1-1. The project shall provide for entry and removal of materials and equipment while preventing releases of radioactive and hazardous contaminants above the threshold limits to the environment.	DOE 5400.1, "General Environmental Protection Program"; DOE 5400.5, "Radiation Protection of the Public and the Environment"; and the National Contingency Plan (NCP).	Editorial change.	3.3.1-1. The project shall provide for entry and removal of materials and equipment while preventing releases of radioactive and hazardous contaminants above the threshold limits to the environment.	DOE Order 5400.1, "General Environmental Protection Program"; DOE Order 5400.5, "Radiation Protection of the Public and the Environment"; and the National Contingency Plan (NCP).
3.3.1-2. The project shall provide the capability for personnel entry into the confinement for non-routine activities.	Access is needed for occasional activities such as maintenance of the excavator bucket.	No change.	3.3.1-2. The project shall provide the capability for personnel entry into the confinement for non-routine activities.	Access is needed for occasional activities such as maintenance of the excavator bucket.
3.3.1-3. The project excavator system shall be capable of retrieving intact waste containers weighing lifting and moving design load weights of up to 454 kg (1000 lbs).	This includes intact waste containers that are empty or contain transuranics TRU, low-level, mixed, and hazardous waste material. The 454-kg (1,000-lb) weight is based on lifting a 55-gallon drum of solidified materials. RWMG BCF-1961 establishes this limit.	Clarification and resolution of comment from February 19, 2002 Agency conference call.	3.3.1-3. The excavator system shall be capable of lifting and moving design load weights of up to 454 kg (1,000 lb).	This includes intact waste containers that are empty or contain TRU, low-level, mixed, and hazardous waste material. The 454-kg (1,000-lb) weight is based on lifting a 55-gal drum of solidified materials.
3.3.1-4 The retrieval transfer cart shall be capable of accepting design load weights up to 159 kg (350 lb).	The retrieval transfer cart weight limits cannot exceed those acceptable for the glovebox. While the excavator is capable of handling larger loads, the glovebox (and thus the retrieval transfer cart) requires a lower weight limit for safety and hazard considerations. For safety reasons, handling 454-kg (1,000-lb) drums in the gloveboxes presents unacceptable risks to the workers (finger, hand, wrist, and arm injuries). For hazard considerations, handling 454-kg (1,000-lb) drums in the gloveboxes poses a higher risk of load slippage and breach of the windows.	New requirement, as discussed in the February 19, 2002 Agency conference call.	3.3.1-4 The retrieval transfer cart shall be capable of accepting design load weights up to 159 kg (350 lb).	The retrieval transfer cart weight limits cannot exceed those acceptable for the glovebox. While the excavator is capable of handling larger loads, the glovebox (and thus the retrieval transfer cart) requires a lower weight limit for safety and hazard considerations. For safety reasons, handling 454-kg (1,000-lb) drums in the gloveboxes presents unacceptable risks to the workers (finger, hand, wrist, and arm injuries). For hazard considerations, handling 454-kg (1,000-lb) drums in the gloveboxes poses a higher risk of load slippage and breach of the windows.



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.3.1-5 The packaging glovebox system shall be capable of handling design load weights up to 159 kg (350 lb).	While the excavator is capable of handling larger loads, the glovebox requires a lower weight limit for safety and hazard considerations. For safety reasons, handling 454-kg (1,000-lb) drums in the gloveboxes presents unacceptable risks to the workers (finger, hand, wrist, and arm injuries). For hazard considerations, handling 454-kg (1,000-lb) drums in the gloveboxes poses a higher risk of load slippage and breach of the windows.	New requirement as discussed in the February 19, 2002 Agency conference call.	3.3.1-5 The packaging glovebox system shall be capable of handling design load weights up to 159 kg (350 lb).	While the excavator is capable of handling larger loads, the glovebox requires a lower weight limit for safety and hazard considerations. For safety reasons, handling 454-kg (1,000-lb) drums in the gloveboxes presents unacceptable risks to the workers (finger, hand, wrist, and arm injuries). For hazard considerations, handling 454-kg (1,000-lb) drums in the gloveboxes poses a higher risk of load slippage and breach of the windows.
3.3.5-1. The project shall monitor air inside the weather enclosure for radiological constituents to ensure protection of workers in accordance with 10 CFR 835, "Occupational Radiation Protection," or equivalent.	There is a weather enclosure structure (no secondary confinement) in the OU 7-10 Glovebox Excavator Method Project. However, operators in the weather enclosure will still need protection from radiological constituents.	Editorial change.	3.3.5-1. The project shall monitor air inside the weather enclosure for radiological constituents to ensure protection of workers in accordance with 10 CFR 835, "Occupational Radiation Protection," or equivalent.	There is a weather enclosure structure (no secondary confinement) in the OU 7-10 Glovebox Excavator Method Project. However, operators in the weather enclosure will still need protection from radiological constituents.
3.3.5-2. The project shall monitor for emissions of radioactive contaminants to the environment.	In accordance with the project ARAR, 40 CFR 61.92 and 93, Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities." <del>Records will be kept of emission measurements.</del>	Clarification of source.	3.3.5-2. The project shall monitor for emissions of radioactive contaminants to the environment.	In accordance with the project ARAR, 40 CFR 61.92 and 93, Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities."
3.3.6-1. The project shall be capable of recording and retrieving information generated during operations.	This information will be necessary to evaluate the retrieval process, determine the contents of the selected area, and determine the future disposition of the removed waste zone materials.	No change. Note: Section header was changed from "Computer Hardware and Software" to "Information Management"	3.3.6.1. The project shall be capable of recording and retrieving information generated during operations.	This information will be necessary to evaluate the retrieval process, determine the contents of the selected area, and determine the future disposition of the removed waste zone materials.
3.3.7-1. The project shall be designed, constructed, operated, and maintained in a manner that prevents fires and explosions.	DOE Order 420.1, "Facility Safety"; and NFPA 801-1998, "Standard for Fire Protection for Facilities Handling Radioactive Materials." The design must consider the operational aspects of the facility and their associated fire hazards and incorporate proper controls through sound design practice to minimize the potential for fire occurrences.	Editorial change.	3.3.7-1. The project shall be designed, constructed, operated, and maintained in a manner that prevents fires and explosions.	DOE Order 420.1, "Facility Safety"; and NFPA 801-1998, "Standard for Fire Protection for Facilities Handling Radioactive Materials." The design must consider the operational aspects of the facility and their associated fire hazards and incorporate proper controls through sound design practice to minimize the potential for fire occurrences.
3.3.7-2. The project shall provide a fire protection system for the weather enclosure structure (WES), retrieval confinement structure (RCS), and the packaging glovebox system (PGS).	DOE Order 420.1, "Facility Safety."	Editorial change.	3.3.7-2. The project shall provide a fire protection system for the weather enclosure structure (WES), retrieval confinement structure (RCS), and the packaging glovebox system (PGS).	DOE Order 420.1, "Facility Safety."
3.3.7-3. The project shall be capable of detecting and suppressing design basis fire(s) as demonstrated by the fire	DOE Order 420.1, "Facility Safety," defines requirements for mitigation of design basis as well as beyond design basis	Basis clarification and editorial changes.	3.3.7-3. The project shall be capable of detecting and suppressing design basis fire(s) as demonstrated by the fire	DOE Order 420.1, "Facility Safety," defines requirements for mitigation of design basis as well as beyond design basis

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
<b>H</b> azard <b>A</b> nalysis (FHA).	fires. It is a function of the FHA to identify the maximum credible and maximum possible fire losses associated with <u>the</u> facility and its operations and <u>to assess</u> the adequacy of the design, including fire protection systems, in mitigating the consequences to DOE-accepted levels.		hazard analysis (FHA).	fires. It is a function of the FHA to identify the maximum credible and maximum possible fire losses associated with the facility and its operations and to assess the adequacy of the design, including fire protection systems, in mitigating the consequences to DOE-accepted levels.
3.3.7-4. The project shall be capable of mitigating the consequences of design basis fire(s) as demonstrated by the <b>F</b> ire <b>H</b> azard <b>A</b> nalysis (FHA).	DOE Order 420.1, "Facility Safety," defines requirements for mitigation of design basis as well as beyond design basis fires. It is a function of the FHA to identify the maximum credible and maximum possible fire losses associated with <u>the</u> facility and its operations and <u>to assess</u> the adequacy of the design, including fire protection systems, in mitigating the consequences to DOE-accepted levels.	Basis clarification and editorial changes.	3.3.7-4. The project shall be capable of mitigating the consequences of design basis fire(s) as demonstrated by the fire hazard analysis (FHA).	DOE Order 420.1, "Facility Safety," defines requirements for mitigation of design basis as well as beyond design basis fires. It is a function of the FHA to identify the maximum credible and maximum possible fire losses associated with the facility and its operations and to assess the adequacy of the design, including fire protection systems, in mitigating the consequences to DOE-accepted levels.
3.4.1-1. The project shall consider features (e.g., attributes, components, and software) in the confinement system (e.g., PGS gloveboxes, glove ports, and RCS) that facilitate leak and pressure testing.	<u>Best management practice, ALARA, and economic considerations. American Glovebox Society standards apply to the PGS gloveboxes and provide guidelines for allowable leak rates and testing methods.</u>	New requirement added to address features for testability.	3.4.1-1. The project shall consider features (e.g., attributes, components, and software) in the confinement system (e.g., PGS gloveboxes, glove ports, and RCS) that facilitate leak and pressure testing.	Best management practice, ALARA, and economic considerations. American Glovebox Society standards apply to the PGS gloveboxes and provide guidelines for allowable leak rates and testing methods.
3.4.1-2. The project shall consider features (e.g., attributes, components, and software) in the emissions monitoring system that facilitate testing for operability.	<u>System inoperability could impact the requirements for emissions monitoring identified in DOE Order 5400.1, DOE Order 5400.5, and continuous and accurate radiological monitoring in accordance with 40 CFR Part 61.93 (NESHAPs). The design must, therefore, allow testing to ensure the system is operating properly and recording accurate data for radiological emissions reporting.</u>	New requirement added to address features for testability.	3.4.1-2. The project shall consider features (e.g., attributes, components, and software) in the emissions monitoring system that facilitate testing for operability.	System inoperability could impact the requirements for emissions monitoring identified in DOE Order 5400.1, DOE Order 5400.5, and continuous and accurate radiological monitoring in accordance with 40 CFR Part 61.93 (NESHAPs). The design must, therefore, allow testing to ensure the system is operating properly and recording accurate data for radiological emissions reporting.
3.4.1-3. The project shall consider features (e.g., attributes, components, and software) in the fire detection, alarm, and suppression system, as well as in the life safety system, that facilitate testing for operability.	<u>NFPA codes and OSHA regulations require periodic testing of these systems. The design must, therefore, include the testing features required by law and applicable codes to allow testing that ensures the systems are either (1) operating properly or (2) capable of proper operation when needed.</u>	New requirement added to address features for testability.	3.4.1-3. The project shall consider features (e.g., attributes, components, and software) in the fire detection, alarm, and suppression system, as well as in the life safety system, that facilitate testing for operability.	NFPA codes and OSHA regulations require periodic testing of these systems. The design must, therefore, include the testing features required by law and applicable codes to allow testing that ensures the systems are either (1) operating properly or (2) capable of proper operation when needed.
3.4.1-4. The project shall include the design and construction of mockup SSCs that allow testing of critical functions, processes, technology, and procedures as deemed necessary by project management.	<u>Best management practice. Because of timely problem detection and related corrective actions, mockups can reduce the risk associated with critical equipment, processes, technologies, and procedures.</u>	New requirement added to address features for testability.	3.4.1-4. The project shall include the design and construction of mockup SSCs that allow testing of critical functions, processes, technology, and procedures as deemed necessary by project management.	Best management practice. Because of timely problem detection and related corrective actions, mockups can reduce the risk associated with critical equipment, processes, technologies, and procedures.



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.4.1-5. The project shall consider features (e.g., attributes, components, and software) in retrieval and operations support systems (e.g., FMM system, closed-circuit television system, PGS hoisting and rigging equipment, and dust suppression system) that facilitate testing for operability.	Best management practice and federal regulations (e.g., OSHA regulations apply to the testing of PGS hoisting and rigging equipment).	New requirement added to address features for testability.	3.4.1-5. The project shall consider features (e.g., attributes, components, and software) in retrieval and operations support systems (e.g., FMM system, closed-circuit television system, PGS hoisting and rigging equipment, and dust suppression system) that facilitate testing for operability.	Best management practice and federal regulations (e.g., OSHA regulations apply to the testing of PGS hoisting and rigging equipment).
3.4.1-6. The project shall consider features (e.g., attributes, components, and software) in radiological and industrial safety systems (e.g., criticality alarm system as integrated, equipment emergency stops, light curtains, and associated control circuits) that facilitate testing for operability.	Best management practice and federal regulations (OSHA regulations apply industrial safety systems [e.g., the PGS light curtain and associated safety interlocks]). The design, therefore, must allow testing that ensures these systems are either (1) operating properly or (2) capable of proper operation when needed.	New requirement added to address features for testability.	3.4.1-6. The project shall consider features (e.g., attributes, components, and software) in radiological and industrial safety systems (e.g., criticality alarm system as integrated, equipment emergency stops, light curtains, and associated control circuits) that facilitate testing for operability.	Best management practice and federal regulations (OSHA regulations apply industrial safety systems [e.g., the PGS light curtain and associated safety interlocks]). The design, therefore, must allow testing that ensures these systems are either (1) operating properly or (2) capable of proper operation when needed.
3.4.1-7. The project shall consider features (e.g., attributes, components, and software) in ventilation and utility systems (e.g., electrical and standby power system, plant and breathing compressed air systems, heating and ventilating system, and the lighting system) that facilitate testing for operability.	Best management practice, federal regulations, and industry codes and standards.	New requirement added to address features for testability.	3.4.1-7. The project shall consider features (e.g., attributes, components, and software) in ventilation and utility systems (e.g., electrical and standby power system, plant and breathing compressed air systems, heating and ventilating system, and the lighting system) that facilitate testing for operability.	Best management practice, federal regulations, and industry codes and standards.
3.4.2 <del>TSR-Required Surveillance</del> [Reserved]		Section deleted and reserved – not used.		
3.4.3 <del>Non-TSR-Inspection and Testing</del> [Reserved]		Section deleted and reserved – not used.		
3.4.4-1. The project equipment located inside confinement shall be maintainable by glove port access (for equipment in gloveboxes) and by personnel entering the confinement in personal protective equipment (PPE) (for equipment in the retrieval area).	The Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications report, <del>INEL/EXT-01-01405</del> , Section 4.3.1, the last paragraph states that "workers may have to enter the confinement structure for repairs and maintenance."	Basis simplification and editorial changes.	3.4.4-1. The project equipment located inside confinement shall be maintainable by glove port access (for equipment in gloveboxes) and by personnel entering the confinement in personal protective equipment (for equipment in the retrieval area).	The Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications report, Section 4.3.1, the last paragraph states that "workers may have to enter the confinement structure for repairs and maintenance."
3.5.1-1. The project shall manage Category 4 quantities of special nuclear materials used for calibrating project equipment.	DOE Order 474.1A, "Control and Accountability of Nuclear Materials"; and DOE Manual 474.1-1A, "Manual for Control and Accountability of Nuclear Materials."	Editorial changes.	3.5.1-1 The project shall manage Category 4 quantities of special nuclear materials used for calibrating project equipment.	DOE Order 474.1A, "Control and Accountability of Nuclear Materials"; and DOE Manual 474.1-1A, "Manual for Control and Accountability of Nuclear Materials."
3.5.1-2. The project shall record handling of excavated waste zone material in the glovebox trays on videotape.	The DOE and the OU 7-10 Glovebox Excavator Method Project agreed to use cameras located above the glovebox trays to record the excavated material in order to permit classification screening. (Meetings of March 14, 2002, and April 2, 2002.)	New requirement to document security items.	3.5.1-2. The project shall record handling of excavated waste zone material in the glovebox trays on videotape.	The DOE and the OU 7-10 Glovebox Excavator Method Project agreed to use cameras located above the glovebox trays to record the excavated material in order to permit classification screening. (Meetings of March 14, 2002, and April 2, 2002.)
3.5.1-3. The project shall have the capability to store up to 3 days of glovebox videotapes in	Basis: Videotapes must be treated as DOE sensitive unclassified information until	New requirement to document security items.	3.5.1-3. The project shall have the capability to store up to 3 days of glovebox videotapes in	Basis: Videotapes must be treated as DOE sensitive unclassified information until

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
a secured manner.	the INEEL Classification Office makes a classification determination. MCP-312, "Sensitive Unclassified Information Program," requires that sensitive information be stored in a locked desk, cabinet, or room when not in use.		a secured manner.	the INEEL Classification Office makes a classification determination. MCP-312, "Sensitive Unclassified Information Program," requires that sensitive information be stored in a locked desk, cabinet, or room when not in use.
3.5.1-4 The project shall have the capability to associate the specific waste drums being processed with the corresponding glovebox videotape recordings.	Basis: If the INEEL Classification Office identifies a classified object on the videotapes, the specific drum containing the classified material must be retrievable from storage.	New requirement to document security items.	3.5.1-4 The project shall have the capability to associate the specific waste drums being processed with the corresponding glovebox videotape recordings.	Basis: If the INEEL Classification Office identifies a classified object on the videotapes, the specific drum containing the classified material must be retrievable from storage.
3.5.1-5 The project shall have security locks on gates and buildings to preclude unauthorized access to the area or operations.	Basis: MCP-303, "INEEL Access Controls."	New requirement to document security items.	3.5.1-5 The project shall have security locks on gates and buildings to preclude unauthorized access to the area or operations.	Basis: MCP-303, "INEEL Access Controls."
3.5.3-1. The project shall be designed for an operating life of <del>six</del> 6 months.	Based on estimated operations schedule with <del>50%</del> contingency. This is most likely to affect construction types of structures.	Editorial change and update.	3.5.3-1. The project shall be designed for an operating life of 6 months.	Based on estimated operations schedule with contingency. This is most likely to affect construction types of structures.
3.5.3-2. The project shall provide temporary facilities and equipment with a minimum design life of 2 years.	DOE-ID Architectural Engineering Standards, Appendix K, "Standard for Trailers, Modular Buildings and Relocatable Structures."	Clarification.	3.5.3-2. The project shall provide temporary facilities and equipment with a minimum design life of 2 years.	DOE-ID Architectural Engineering Standards, Appendix K, "Standard for Trailers, Modular Buildings and Relocatable Structures."
3.5.3-3. The project shall include features in the design to facilitate DD&D of the facility.	DOE-G 435.1-1, Crosswalk Tables DOE Order 5820.2A vs. DOE O 435.1/M 435.1-1.	and reworded.		
3.5.3-4. The project shall be capable of passive safe shutdown of the retrieval facility for one year at closure.	WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.2, Schedule Estimate, Closeout. Closeout encompasses those activities necessary for placing the facility in safe shutdown. The excavation will be stabilized by backfilling after waste retrieval and before passive safe shutdown at closure. The current approach is that there will not be a one-year safe shutdown period as previously included in the WAG 7 Analysis of OU 7-10 Stage II Modifications report; however, the capability will exist.	Requirement deleted. Safe shutdown requirements are covered in the 3.5.6 requirements.		
3.5.3-5. The project shall stabilize the excavation after waste retrieval by backfilling the excavation.	The backfill prevents airborne spread of contamination. It is necessary to backfill the excavation in order to place the facility in safe shutdown. WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.2, Schedule Estimate, Closeout. Closeout encompasses those activities necessary for placing the facility in safe shutdown.	Moved to 3.5.6-1 and reworded.		



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.5.4-1. The project shall apply quality controls commensurate with the risk, function, and importance of the system and its components.	10 CFR 830, "Nuclear Safety Management," Subpart A, "Nuclear Safety Management Requirements"; DOE Order 414.1A, "Quality Assurance"; and ASME NQA-1-1997, "Quality Assurance Requirements for Nuclear Facility Applications."	Basis clarification.	3.5.4-1. The project shall apply quality controls commensurate with the risk, function, and importance of the system and its components.	10 CFR 830, "Nuclear Safety Management," Subpart A, "Quality Assurance Requirements"; DOE Order 414.1A, "Quality Assurance"; and ASME NQA-1-1997, "Quality Assurance Requirements for Nuclear Facility Applications."
3.5.5-1. The project shall maintain data records of each waste container packaged.	Per DOE Order 435.1, "Radioactive Waste Management"; and DOE Manual 435.1-1, "Radioactive Waste Management Manual," data records for all waste generated, treated, stored, transported, or disposed must be collected and maintained in accordance with DOE Order 200.1, "Information Management Program," and DOE Order 414.1, "Quality Assurance."	Editorial changes.	3.5.5-1. The project shall maintain data records of each waste container packaged.	Per DOE Order 435.1, "Radioactive Waste Management"; and DOE Manual 435.1-1, "Radioactive Waste Management Manual," data records for all waste generated, treated, stored, transported, or disposed must be collected and maintained in accordance with DOE Order 200.1, "Information Management Program," and DOE Order 414.1, "Quality Assurance."
3.5.5-2. The project shall design all safety-significant structures, systems, and components (SSCs) to meet the safety function and functional requirements identified in the safety analysis.	Safety-significant SSCs must meet their functional requirements. The safety analysis identifies which SSCs are designated as safety-significant.	No change.	3.5.5-2. The project shall design all safety-significant structures, systems, and components (SSCs) to meet the safety function and functional requirements identified in the safety analysis.	Safety-significant SSCs must meet their functional requirements. The safety analysis identifies which SSCs are designated as safety-significant.
3.5.5-3. The project shall select, as practical, design and procedure options that minimize production of secondary wastes in the retrieval, handling, and storage of soils and wastes.	The INEEL environmental policy requires waste minimization and is documented in Program Description Document 1012, Rev. 7: "Integrate all efforts into project planning, design, and construction to minimize toxicity and volume of waste generated, conserve natural resources and energy, and minimize environmental impacts." In addition, DOE Order 5400.1, "General Environmental Protection Program" and DOE Order 435.1, "Radioactive Waste Management" require waste minimization efforts. Secondary wastes are wastes other than those currently in Pit 9.	Clarification of source and editorial changes.	3.5.5-3. The project shall select, as practical, design and procedure options that minimize production of secondary waste in the retrieval, handling, and storage of soils and waste.	The INEEL environmental policy requires waste minimization and is documented in Program Description Document 1012, Rev. 7: "Integrate all efforts into project planning, design, and construction to minimize toxicity and volume of waste generated, conserve natural resources and energy, and minimize environmental impacts." In addition, DOE Order 5400.1, "General Environmental Protection Program" and DOE Order 435.1, "Radioactive Waste Management" require waste minimization efforts.
3.5.6 Facility Shutdown, Layup, and D&D&D. This section contains design and functional requirements related to the shutdown, layup, and D&D&D of project facilities and systems. Shutdown, layup, and D&D&D are the defined life-cycle phases that follow waste zone material retrieval and underburden sampling and	NA	This section consolidates several related requirements into the same section for clarity and adds shutdown, layup, and D&D&D requirements and since these life-cycle phases are included in the	3.5.6 Facility Shutdown, Layup, and D&D&D. This section contains design and functional requirements related to the shutdown, layup, and D&D&D of project facilities and systems. Shutdown, layup, and D&D&D are the defined life-cycle phases that follow waste zone material retrieval and underburden sampling and	NA

Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
lead up to final project closeout. Project closeout is as described in Section V, "Project Closeout," of GDE-70, "General Project Management Methods Guide."		project scope.	lead up to final project closeout. Project closeout is as described in Section V, "Project Closeout," of GDE-70, "General Project Management Methods Guide."	
3.5.6-1. The project shall stabilize the excavation site after waste zone material retrieval by backfilling the excavation.	The backfill prevents airborne spread of contamination, isolates the waste source term, and removes the physical dangers of an excavated hole in the ground. It is necessary to backfill the excavation in order to place the facility in safe shutdown. WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.2, Schedule Estimate, Closeout. Closeout encompasses those activities necessary for placing the facility in safe shutdown.	Previously 3.5.3-5. Section 3.5.6 consists of requirements that are new or relocated and reworded. This new section is intended to improve clarity and completeness of the requirements baseline with regard to shutdown, layup, and D&D&D.	3.5.6-1. The project shall stabilize the excavation site after waste zone material retrieval by backfilling the excavation.	The backfill prevents airborne spread of contamination, isolates the waste source term, and removes the physical dangers of an excavated hole in the ground. It is necessary to backfill the excavation in order to place the facility in safe shutdown.
3.5.6-2. The project shall place the project facilities in stable and known conditions for safe shutdown following completion of waste zone material retrieval and underburden sampling operations.	DOE Order 430.1A, "Life Cycle Asset Management," requires this to occur at shutdown before completion of mission activities. Facility conditions and system states after shutdown activities have occurred will (1) be protective of worker health and safety, the public, and the environment and (2) provide for cost-efficient activities during the layup (i.e., surveillance and maintenance) period.	Section 3.5.6 consists of requirements that are new or relocated and reworded. This new section is intended to improve clarity and completeness of the requirements baseline with regard to shutdown, layup, and D&D&D.	3.5.6-2. The project shall place the project facilities in stable and known conditions for safe shutdown following completion of waste zone material retrieval and underburden sampling operations.	DOE Order 430.1A, "Life Cycle Asset Management," requires this to occur at shutdown before completion of mission activities. Facility conditions and system states after shutdown activities have occurred will (1) be protective of worker health and safety, the public, and the environment and (2) provide for cost-efficient activities during the layup (i.e., surveillance and maintenance) period.
3.5.6-3. The project shall maintain the project facilities in stable and known conditions during the layup period (after shutdown) until D&D&D.	A short layup period after shutdown is anticipated during which plans are initiated and resources and processes are put in place to execute the D&D&D.	Section 3.5.6 consists of requirements that are new or relocated and reworded. This new section is intended to improve clarity and completeness of the requirements baseline with regard to shutdown, layup, and D&D&D.	3.5.6-3. The project shall maintain the project facilities in stable and known conditions during the layup period (after shutdown) until D&D&D.	A short layup period after shutdown is anticipated during which plans are initiated and resources and processes are put in place to execute the D&D&D.
3.5.6-4. The project shall perform D&D&D of project facilities, systems, and components that are determined as nonessential to or obstructing OU 7-10 or WAG 7 missions.	Work Package Plan for OU 7-10 Glovebox Excavator Method Project - Safe Shutdown and D&D&D, Work Breakdown Structure (WBS) C.1.01.07.04.04.05, includes the assumption that D&D&D will occur as part of the project in fiscal year (FY) 2005.	Section 3.5.6 consists of requirements that are new or relocated and reworded. This new section is intended to improve clarity and completeness of the requirements baseline with regard to shutdown, layup, and D&D&D.	3.5.6-4. The project shall perform D&D&D of project facilities, systems, and components that are determined as nonessential to or obstructing OU 7-10 or WAG 7 missions.	Work Package Plan for OU 7-10 Glovebox Excavator Method Project - Safe Shutdown and D&D&D, Work Breakdown Structure (WBS) C.1.01.07.04.04.05, includes the assumption that D&D&D will occur as part of the project in fiscal year (FY) 2005.



Table A-1. (continued).

Technical and Functional Requirements Document - Revision 2	Basis - Revision 2	Justification for Change	Technical and Functional Requirements Document - Revision 3	Basis - Revision 3
3.5.6-5. The project shall include features in the design to facilitate D&D&D of project facilities and systems the facility.	DOE G 435.1-1, "Crosswalk Tables DOE Order 5820.2A vs. DOE O 435.1/M 435.1-1."	Previously 3.5.3-3, Section 3.5.6 consists of requirements that are new or relocated and reworded. This new section is intended to improve clarity and completeness of the requirements baseline with regard to shutdown, layup, and D&D&D.	3.5.6-5. The project shall include features in the design to facilitate D&D&D of project facilities and systems.	DOE G 435.1-1, "Crosswalk Tables DOE Order 5820.2A vs. DOE O 435.1/M 435.1-1."